CH.2 AB HW 2.5 Implicit Differentiation

Name_____

Find each derivative

1) $5x^2 + y^2 = 81$

2) $x^3 - 3x^2y + 2xy^2 = 12$

3) $2x^2 + 4xy = x - y$

Find the equation of the tangent line and normal line at the given point

4) $x^2 + y^2 = 25 \quad ; \quad (4,-3)$

Find the points at which the graph of the equation has a vertical or horizontal tangent line

5) $25x^2 + 16y^2 + 200x - 160y + 400 = 0$ **vertical tangent** **horizontal tangent**

Find $\frac{d^2y}{dx^2}$ in terms of x and y.

6) $2x^2 - 3y^2 = 17$

7) $y^2 = x^3$